

Application No. 09/762,846

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 1 (amended) has been amended as follows:

1. (Twice Amended) A piezo-oscillator comprising:

an oscillator circuit including a piezo-vibrator and an amplifier circuit, one terminal of said piezo-vibrator being connected to an input terminal of said amplifier circuit and another terminal of said piezo-vibrator being grounded via a capacitance element so that a frequency that is based upon resonance frequency of said piezo-vibrator is outputted from an output of said amplifier circuit.

a constant-voltage circuit connected to a power source, and

a first switch circuit that connects, by selection, either one of said power source and said constant-voltage circuit to said amplifier circuit; wherein

said first switch circuit

selects said constant-voltage circuit when a voltage to be supplied from said power source is equal to or lower than a predetermined value and

selects said power source when a voltage to be supplied from said power source is higher than said predetermined value.

Claim 2 (amended) has been amended as follows:

2. (Twice Amended) A piezo-oscillator comprising:

an oscillator circuit including a piezo-vibrator and an amplifier circuit, one terminal of said piezo-vibrator being connected to an input terminal of said amplifier circuit and another terminal of said piezo-vibrator being grounded via a capacitance element so that a frequency that is based upon resonance frequency of said piezo-vibrator is outputted from an output of said amplifier circuit.

a second switch circuit connected to a power source line for said amplifier [oscillator] circuit,

a constant-current circuit connected to said second switch circuit, and

a resistor connected to said second switch circuit; wherein
said second switch circuit
connects said power source line and said constant-current circuit when a voltage to be
supplied from a power source is equal to or lower than a predetermined value, and
connects said power source line and said resistor when a voltage to be supplied from said
power source is higher than said predetermined value.

Claim 3 (amended) has been amended as follows:

3. (Twice Amended) A piezo-oscillator comprising:

an oscillator circuit including a piezo-vibrator and an amplifier circuit, one terminal of
said piezo-vibrator being connected to an input terminal of said amplifier circuit and another
terminal of said piezo-vibrator being grounded via a capacitance element so that a frequency that
is based upon resonance frequency of said piezo-vibrator is outputted from an output of said
amplifier circuit.

a constant-voltage circuit connected to a power source, and
a frequency control voltage section connected to said piezo-vibrator, and
a first switch circuit that connects, by selection, either one of said power source and said
constant-voltage circuit to said amplifier circuit; wherein

said first switch circuit
selects said constant-voltage circuit when a voltage to be supplied to said
frequency control voltage section is equal to or lower than a predetermined value, and
selects said power source when a voltage to be supplied to said frequency control
voltage section is higher than said predetermined value.

Claim 4 (amended) has been amended as follows:

4. (Twice Amended) A piezo-oscillator comprising:

an oscillator circuit including a piezo-vibrator and an amplifier circuit, one terminal of
said piezo-vibrator being connected to an input terminal of said amplifier circuit and another
terminal of said piezo-vibrator being grounded via a capacitance element so that a frequency that
is based upon resonance frequency of said piezo-vibrator is outputted from an output of said
amplifier circuit.

a frequency control voltage section connected to said piezo-vibrator,
a second switch circuit connected to a power source line of said oscillator circuit,
a constant-current circuit connected to said second switch circuit, and
a resistor connected to said second switch circuit; wherein
said second switch circuit

connects said power source line and said constant-current circuit when a voltage
to be supplied to said frequency control voltage section is equal to or lower than a predetermined
value, and

connects said power source line and said resistor when a voltage to be supplied to
said frequency control voltage section is higher than said predetermined value.

Claim 5 (amended) has been amended as follows:

5. (Twice Amended) The [A] piezo-oscillator according to claim 3, wherein when a
voltage supplied to said frequency control voltage section [from said power source] is higher
than said predetermined value [or when a voltage supplied to said frequency control voltage
section is higher than said predetermined value], [said power source] a voltage of said power
source is controlled, and a drive level of said piezo-vibrator is changed [controlled] by changing
a voltage to be supplied to said amplifier circuit.

Claim 6 (amended) has been amended as follows:

6. (Twice Amended) The [A] piezo-oscillator according to claim 4, wherein when a
voltage supplied to said frequency control voltage section [from said power source] is higher
than said predetermined value [or when a voltage supplied to said frequency control voltage
section is higher than said predetermined value], [said power source] a voltage of said power
source is controlled, and a drive level of said piezo-vibrator is changed [controlled] by changing
a voltage to be supplied to said amplifier circuit.

Claim 7 has been amended as follows:

7. (Amended) The [A] piezo-oscillator according to claim 5 or 6, wherein it is
possible to examine [confirm] drive level dependency characteristics of said piezo-vibrator by
controlling a drive level of said piezo-vibrator.

Claim 8 (amended) has been amended as follows:

8. (Twice Amended) A piezo-oscillator comprising:

an oscillator circuit including a piezo-vibrator and an amplifier circuit, one terminal of said piezo-vibrator being connected to an input terminal of said amplifier circuit and another terminal of said piezo-vibrator being grounded via a capacitance element so that a frequency that is based upon resonance frequency of said piezo-vibrator is outputted from an output of said amplifier circuit, [and]

a constant-voltage circuit connected to a power source, [and]

a first switch circuit or a second switch circuit, said first switch circuit connecting [that connects], by selection, either one of said power source and said constant-voltage circuit to said amplifier circuit, [or a] and said second switch circuit being connected to a power source line for said oscillator circuit,

a constant-current circuit connected to said second switch circuit, and

a resistor connected to said second switch circuit; wherein

said first switch circuit

selects said constant-voltage circuit when a voltage to be supplied from said power source is equal to or lower than a predetermined value, and

selects said power source when a voltage to be supplied from said power source is higher than said predetermined value; or

said second switch circuit

connects said power source line and said constant-current circuit when a voltage to be supplied from said power source is equal to or lower than a predetermined value, and

connects said power source line and said resistor when a voltage to be supplied from said power source is higher than said predetermined value.

Claim 9 has been amended as follows:

9. (Amended) The [A] piezo-oscillator according to claim 6, wherein drive level dependency characteristics of said piezo-vibrator are examined [confirmed] by controlling a drive level of said piezo-vibrator.

Claim 10 has been amended as follows:

10. (Amended) The piezo-oscillator according to claim 1, wherein when said voltage to be supplied from said power source is higher than said predetermined value, a voltage to be supplied to said amplifier circuit is changed by controlling a voltage of said power source, thus changing [controlling] a drive level of said piezo-vibrator.

Claim 11 has been amended as follows:

11. (Amended) The piezo-oscillator according to claim 2, wherein when said voltage to be supplied from said power source is higher than said predetermined value, a voltage to be supplied to said amplifier circuit is changed by controlling a voltage of said power source, thus changing [controlling] a drive level of said piezo-vibrator.

Claim 12 has been amended as follows:

12. (Amended) The piezo-oscillator according to claim 10, wherein drive level dependency characteristics of said piezo-vibrator are examined [confirmed] by controlling said drive level of said piezo-vibrator.

Claim 13 has been amended as follows:

13. (Amended) The piezo-oscillator according to claim 11, wherein drive level dependency characteristics of said piezo-vibrator are examined [confirmed] by controlling said drive level of said piezo-vibrator.